

TOXIC

San Francisco prepares to ban certain chemicals in products for tots, but enforcement will be tough -- and toymakers question necessity

- [Jane Kay, Chronicle Environment Writer](#)
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Widely used chemicals with suspected links to cancer and developmental problems in humans are present in common baby products like the yellow rubber ducky, bath books and clear plastic bottles, a Chronicle analysis confirmed.

The toxic chemicals, which are used to harden or soften plastics, can leach out each time a baby sucks on a favorite doll or gnaws on a cool teething ring, scientists say.

Starting Dec. 1, a first-in-the-nation ban goes into effect in San Francisco, prohibiting the sale, distribution and manufacture of baby products containing any level of bisphenol A and certain levels of phthalates.

The law, modeled on a European Union ban that started this year, reflects emerging concerns by environmental health scientists over the buildup of industrial chemicals in humans, particularly young children. Especially under scrutiny are chemicals that mimic estrogen, possibly disrupting the hormonal system and altering the normal workings of genes.

Yet the trouble is that no one knows for sure how many baby products contain the chemicals. Stores, many of which are still unaware of the pending ban, will be unable to decide what to take off the shelves because manufacturers aren't required to disclose what chemicals go into a product. For that reason, The Chronicle set out to test several common baby toys and found that most of them -- even ones labeled "safe, non-toxic" -- contained the chemicals.

Toymakers and companies affected by the ban have sued to block enforcement of the San Francisco law, saying their products have been used safely for decades. A January hearing is scheduled. If the courts uphold the measure, most companies say they'll comply with the ban even though they believe it's unnecessary.

"The U.S. government has always felt that what's in the marketplace is perfectly safe for the consumer," said Jeff Holzman, CEO of New York-based Goldberger Doll Manufacturing Co., who found out from The Chronicle that his company's Fuzzy Fleece Doll would be banned under the San Francisco law.

"Be that as it may, if there's a question, all the products that we make will be made without phthalates by 2007," he said.

The U.S. Environmental Protection Agency admits that its own guidelines -- called reference doses -- for safe human exposure to the chemicals are decades old and don't take into account the new research. The EPA is actively reassessing the health risks of three types of phthalates but is not reassessing bisphenol A, agency spokeswoman Suzanne Ackerman said.

The Food and Drug Administration, which controls chemicals that may touch food, and Consumer Product Safety Commission, which is responsible for toy safety, haven't limited the chemicals in baby products for years. Representatives say they have no plans to impose new restrictions.

Chemical-makers say that's appropriate.

"We believe at very low levels of exposure, there is no concern," said Marian Stanley, a spokeswoman for the four U.S. phthalate-makers.

Low doses of bisphenol A are also not a health risk, said Steve Hentges, a spokesman for the five major U.S. companies that make that chemical. "In every case, the weight of evidence supports the conclusion that bisphenol A is not a risk to human health at the extremely low levels to which people might be exposed," he said.

Many scientists who study the materials disagree and point to hundreds of scientific studies they say show why bans such as San Francisco's are needed.

It's not the first time San Francisco has led the way in instituting a chemical ban. A decade ago, its leaders voted to eliminate the most toxic pesticides from city property. That sort of action is needed to cut exposure to harmful chemicals, said Dr. Richard Jackson, a UC Berkeley professor who for a decade headed the Center for Environmental Health at the U.S. Centers for Disease Control and Prevention.

"We don't want dry-cleaning solvents in our livers, lead in our brains or perchlorate in our thyroids. We certainly don't want endocrine disrupters in breast milk and umbilical cord blood. We need to be ratcheting down these levels in people by reducing the loading of these chemicals in the environment," Jackson said.

The Intergovernmental Forum on Chemical Safety, a group based at the World Health Organization, recommended in September prevention of exposure to known hazards from chemicals already detected in some toys.

"Protections for children from chemicals in toys are weak at best and dysfunctional at worst," said Joel Tickner, a professor of environmental health at the University of Massachusetts Lowell. He has served as a consultant to the forum and on national panels that advise the U.S. government on chemicals in the environment.

"Consumers would be astonished if they knew that federal laws regulating chemicals in children's toys all require balancing the benefits of protecting children with the costs to industry of implementing safer alternatives," he said.

The tests

It's often impossible for parents to tell if the teething ring or baby rattle they hand their children contains bisphenol A or phthalates. The Chronicle purchased 16 children's products and sent them to the STAT Analysis Corp. laboratory in Chicago, one of the few commercial labs that test for these chemicals.

The city's ordinance bans the manufacture, distribution or sale of items intended for children younger than 3 if they contain any level of bisphenol A. Six different forms of phthalates are covered by the ban, which sets the maximum phthalate level at 0.1 percent of the chemical makeup of any part of the product. Three of those phthalates are banned only in items intended for kids younger than 3, but the law doesn't include age limits for products that contain three other phthalates -- DEHP, DBP and BBP.

Some items exceeded the city's phthalate limits:

- Little Remedies Little Teethers, a Prestige Brands product sold with an oral pain-relief gel, contained one phthalate at nearly five times the limit.

- The face of Goldberger's Fuzzy Fleece Baby doll contained one form of phthalate at nearly twice the limit.

- A rubber ducky sold at a Walgreens store contained a carcinogenic form of phthalate, DEHP, at levels 13 times higher than allowed under San Francisco's pending ordinance. A second form of phthalate was found three times above the limit.

These products were found to contain bisphenol A and would be banned in the city:

- The ring on a Baby Einstein rattle made by the Disney Co.

- A Fun Ice Soothing Ring teether made by Munchkin Inc.

- The plastic covers on two of Random House's waterproof books -- "Elmo Wants a Bath" and Dr. Seuss' "One Fish Two Fish Red Fish Blue Fish." The books also contain levels of phthalates below San Francisco's limit.

- A Walgreen-brand baby bottle decorated with colorful fish.

-- The face of the Goldberger doll.

-- The body of a My Little Pony toy contained both bisphenol A and one form of phthalate that measured three times the city's limit. The toy wouldn't fall under the San Francisco ban, however, because it's marketed for ages 3 and up. It didn't contain high enough levels of the other three phthalates to be subject to the ban.

The method used by STAT to test for bisphenol A wasn't sensitive enough to detect the chemical in three polycarbonate clear plastic baby bottles made by Philips Avent, Gerber and Playtex and one clear plastic Gerber cup. Experts from the American Plastics Council, however, say that polycarbonate plastic can't be made without bisphenol A. Those items would be banned under the San Francisco law.

The lab didn't detect the chemicals in three other products chosen by The Chronicle:

-- A Baby Einstein caterpillar teething ring.

-- A no-spill cup made by Nuby/Luv n' care.

-- The plastic mouth cover of a Disney pacifier.

Most companies whose items were found to contain phthalates or bisphenol A learned about the pending San Francisco ban through interviews with The Chronicle.

Among them was Walgreen Co., which has since begun to examine ways to comply with the ban. Officials at the company's Illinois headquarters said the chain is asking its vendors to identify products that do not comply with the San Francisco law.

Representatives for Prestige Brands in Irvington, N.Y., said the company would remove the teether with phthalates from San Francisco shelves and is working on finding an alternative.

After Random House officials learned of the test results on their baby bath books, they made plans to conduct their own tests. The company pledged to stop shipping books to San Francisco if it finds the products would violate the pending ban.

When notified of the chemicals in its products, Hasbro spokesman Gary Serby responded in an e-mail: "Hasbro does not agree with the science behind the ordinance, but will comply as of Dec. 1."

Nidia Tatalovich, a Disney representative, said all of the company's products meet state and federal compliance guidelines. She said that her company would examine the San Francisco law.

Shannon Jenest, spokeswoman for Philips Avent, which makes polycarbonate baby bottles, said, "We're working through the details right now. We're very concerned with those standards and will make sure that we adhere to those guidelines."

Munchkin, the company whose teething ring contained bisphenol A, didn't respond to repeated queries.

In the past three weeks, groups representing the chemical manufacturers, toymakers, retailers and San Francisco's toy stores, Citikids and Ambassador Toys, filed two separate lawsuits, arguing that the city doesn't have the authority to pass such a ban.

Some of the same trade groups -- the California Retailers Association, the California Grocers Association, the Juvenile Products Manufacturers Association and the American Chemistry Council -- successfully fought a bill this year in the state Legislature that would have enacted a ban similar to San Francisco's. The city agreed to delay enforcement of its ordinance until a Jan. 8 hearing at which the companies will seek a preliminary injunction. A hearing date hasn't been set for the second lawsuit, which was filed Thursday.

Yet even without an injunction, there are no penalties for companies that violate the ban. City leaders said they wanted to make sure all companies knew about the ban before issuing fines or taking other actions.

The San Francisco ordinance is certain to cause concern among parents who may not have been aware of the European ban or studies on chemicals commonly found in child products.

Mary Brune, a technical writer from Alameda, said she first started paying attention to the issue when she was nursing her baby last year and read about chemicals in breast milk. With two friends, she founded Making Our Milk Safe, or MOMS.

She scans Web sites to find toys made without plastics and tells friends about baby bottles made from glass, polyethylene, propylene and other materials considered safe. She stores food in glass. Last month she passed out leaflets near Albany's Target store, urging company officials to remove polyvinyl chloride (PVC) toys from their shelves.

"It's impossible to keep plastic toys out of children's mouth. They chew on things," Brune said. "So we as parents rely on the manufacturers of products to ensure their safety. If consumers demand safer products and businesses demand safer products from their suppliers, we'll be able to get these toxic products off our shelves."

The health effects

Scientists simply don't know how low or high levels of phthalates or bisphenol A will cause health problems in babies if they suck on a bottle or handle a doll containing those substances.

Studies on the chemicals are largely conducted with high-dose and low-dose experiments on animals, which over time help scientists determine the level of chemicals that may pose unacceptable risks.

Those sorts of strictly controlled animal experiments are what first showed that the pesticide chlordane could cause cancer and that industrial pollutants like dioxin could cause birth defects. Such studies were also cited when California named one phthalate a carcinogen in 1988 and two others as reproductive toxicants in 2005.

There is a dearth of long-term, epidemiological studies on children exposed to phthalates and bisphenol A. So scientists from groups like the American Chemistry Council say the fact that the chemicals are found in human bodies doesn't necessarily mean they cause health problems.

Yet scientists who study phthalates and bisphenol A say there is enough evidence to implicate some forms of the chemicals now.

New evidence about how bisphenol A affects lab animals and how it can leach out of items such as plastic bottles came out of 1999 research by Koji Arizono at Japan's Kumamoto University.

Arizono found that a used polycarbonate baby bottle can leach out bisphenol A at daily levels that damaged the brain and reproductive systems in lab animals. If a 9-pound baby drinks about a quart of liquid from the bottle a day, it can ingest 4 micrograms of bisphenol A.

"We're showing that amount is in the zone of danger, based on the animal studies," said University of Missouri researcher Frederick vom Saal, who said that the doses that have hurt lab animals were very close to what a baby would get from a baby bottle.

Vom Saal found that 148 published bisphenol A studies, all financed by government bodies, reported significant health effects, including altering the function of organs and reproductive systems in male and female animals.

That compares with 27 studies that found no evidence of harm. Thirteen of those studies were financed by chemical corporations.

Last year, researchers at the Tufts University School of Medicine exposed pregnant lab rodents to levels of bisphenol A 2,000 times lower than the EPA's 18-year-old safety guideline, which the agency admits is outdated. That old guideline suggests it would be safe, for example, for a 9-pound baby to swallow about 200 milligrams (or 200,000 micrograms) of the chemical a day.

But rodents given just a very small fraction of that amount showed changes in mammary glands. In humans, such changes are associated with a higher risk of breast cancer. Other

researchers showed that exposure of newborn rats to bisphenol A causes early stages of prostate cancer.

Testifying before the state Legislature this year on the failed bill, one of the EPA's top phthalate researchers, Earl Gray, said studies on pregnant rodents found in their male offspring such effects as disrupted testosterone production and low sperm counts, malformation of sexual organs, and disruption of the endocrine system.

There's no reason to believe that the same effects wouldn't be the same in humans as well, Gray said.

And last year, for the first time, scientists showed that pregnant women who had higher concentrations of some phthalates in their urine were more likely to later give birth to sons with genitals that showed changes similar to those seen in exposed rodents.

It appeared that human infants, like rodents, were less completely masculinized. Some of the changes, including incompletely descended testes, were similar to those included in the "phthalate syndrome" seen in lab rodents that received high doses of phthalates, University of Rochester researchers found. Later in the lab animals' lives, those genital changes were associated with lower sperm count, decreased fertility and, in some, testicular tumors.

The Consumer Product Safety Commission, which works closely with industry, has developed a voluntary agreement to eliminate the phthalate DEHP in some baby products.

In 1983, the commission determined that substantial exposure to DEHP could put children at risk of cancer. The agency didn't issue a regulation, but instead reached an agreement with the Toy Industry Association to keep DEHP out of pacifiers, rattles and teething rings. The agreement leaves unregulated all other toys that babies put in their mouths.

When advised that Chronicle tests found that all the polyvinyl chloride toys contained DEHP, including a teething ring, Scott Wolfson, a spokesman for the commission, promised that his agency would look into it.

Nevertheless, Wolfson said his agency believes that consumer products that contain low levels of phthalates are not a danger to children. His agency doesn't conduct its own tests on toys but follows up when other organizations share test results, he said.

"We have a saying: 'The dose makes the poison.' We are not seeing a high dose of phthalates coming out of a product and into the body of a child."